

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An implant for implantation on a patient's femur, the implant comprising:

(a) a condylar portion having (i) a condylar bone-facing implant surface configured to oppose at least a portion of a femoral condyle and (ii) a condylar articular implant surface configured to articulate with at least a portion of a tibial surface; and

(b) a trochlear portion having (i) a bone-facing implant surface configured to oppose at least a portion of a trochlea and (ii) an articular implant surface configured to articulate with at least a portion of a patellar surface, when the implant is implanted on the patient's femur;

wherein at least a portion of ~~one of the condylar~~ bone-facing implant surfaces comprises a planar surface to abut a bone cut surface ~~of the patient's condyle~~ and wherein at least a portion of the condylar articular implant surface comprises a curvature that substantially replicates a curvature of at least a portion of ~~a corresponding~~ an uncut articular surface of the patient's femoral condyle when the planar surface abuts the bone cut surface.

2. (Cancelled)

3. (Original) The implant of claim 1 wherein the implant has a thickness of a cartilage defect in a patient.

4. (Original) The implant of claim 1 wherein the implant has a thickness of 85% of a cartilage defect in a patient.

5. (Original) The implant of claim 1 wherein the implant has a thickness of between 65%-100% of a cartilage defect of a patient.

6. (Original) The implant of claim 1 wherein the implant has a thickness of a cartilage defect plus a predefined offset value.

7. (Original) The implant of claim 6, wherein said offset value can be selected to adjust for axis malalignment.
8. (Original) The implant of claim 1 wherein the implant is constructed of a material comprising metal or metal alloy.
9. (Original) The implant of claim 1 wherein the material comprises one or more biologically active materials.
10. (Original) The implant of claim 6 wherein the implant is coated with a biologically active material.
11. (Original) The implant of claim 1 wherein the implant is comprised of a metal or metal alloy and a polymer.
12. (Previously Presented) The implant of claim 1 further having a structure for attachment on at least one of the bone-facing surface and the articular surface selected from the group consisting of: ridges, pegs, pins, cross-members, teeth and protrusions.
13. (Original) The implant of claim 12 further having a plurality of structures for attachment.
14. (Original) The implant of claim 13 wherein the relative orientation of the structures for attachment are selected from the group consisting of: symmetrical, asymmetrical, rows, circles, triangles, and random.
15. (Previously Presented) The implant of claim 1 wherein a second component of the implant provides the patellar surface.

16. (Previously Presented) The implant of claim 1 wherein each of the bone-facing implant surface and the articular implant surface has a slope relative to a longitudinal axis through at least a portion of the implant and further wherein the slope of the bone-facing implant surface relative to the slope of the articular implant surface is selected from the group consisting of: positive, negative, and null.

17. (Previously Presented) The implant of claim 1 wherein the articular implant surface of the trochlear portion of the implant comprises at least a portion that approximates the shape of one of the patient's uncut trochlear or patellar articular surfaces.

18. (Cancelled)

19. (Original) The implant of claim 1 wherein the implant is selected from a library of implants.

20. (Currently Amended) The implant of claim 1 wherein the implant is sized to be surgically implanted via an incision of 10 cm or less.

21. (Currently Amended) The implant of claim 1 wherein the implant is sized to be surgically implanted via an incision of 6 cm or less.

22. (Original) The implant of claim 1 wherein the range of motion of the joint is restored to between 80-99.9% of normal joint motion.

23. (Original) The implant of claim 1 wherein the range of motion of the joint is restored to between 90-99.9% of normal joint motion.

24. (Original) The implant of claim 1 wherein the range of motion of the joint is restored to between 95-99.9% of normal joint motion.

25. (Original) The implant of claim 1 wherein the range of motion of the joint is restored to between 98-99.9% of normal joint motion.

26. (Original) The implant of claim 1 wherein the implant is formed to oppose at least a portion of a second condyle on the femur.

27. (Currently Amended) A kit for repairing a knee, the kit comprising:

(a) a femoral implant comprising:

(i) a condylar portion having a condylar bone-facing femoral implant surface configured to oppose at least a portion of a femoral condyle, and having a condylar articular implant surface configured to articulate with at least a portion of a tibial surface, and

(ii) a trochlear portion having a bone-facing implant surface configured to oppose at least a portion of a trochlea and an articular implant surface configured to articulate with at least a portion of a patellar surface, when the implant is implanted on the patient's femur;

wherein at least a portion of one of the condylar bone-facing implant surfaces comprises a planar surface to abut a bone cut surface ~~of the patient's condyle~~ and wherein at least a portion of the condylar articular implant surface comprises a curvature that substantially replicates the shape of at least a portion of a corresponding ~~an~~ uncut articular surface when the planar surface abuts the bone cut surface; and

(b) a patellar implant comprising:

(i) a first surface configured to engage the articular implant surface of the trochlear portion of the femoral implant, and

(ii) a second surface configured to engage the patient's patella.

28. (Currently Amended) An implant for replacing or repairing at least two compartments of a knee joint of implantation on a patient's femur, the implant comprising:

(a) a body shaped to provide articular surfaces for at least two compartments of the patient's knee, the body having one or more condylar portions each having (i) a condylar at least one bone-facing implant surface configured to oppose at least a portion of a femoral surface of the knee joint and at least one condyle and (ii) a condylar articular implant surface configured to

articulate with at least a portion of a weight-bearing tibial surface, when the implant is implanted on the patient's femur; and

(b) ~~a trochlear portion having (i) a bone-facing implant surface configured to oppose at least a portion of a trochlea and (ii) an articular implant surface configured to articulate with at least a portion of an opposing articular surface, when the implant is implanted on the patient's femur;~~

wherein at least a portion of the ~~condylar~~ bone-facing implant surface comprises a planar surface to abut a bone cut surface ~~of the patient's knee~~ of the patient's condyle and wherein at least a portion of the ~~condylar~~ articular implant surface comprises a curvature that substantially approximates at least a portion of ~~a corresponding~~ an uncut articular surface of the patient's knee ~~femoral~~ condyle, when the planar surface abuts the bone cut surface.

29. (Currently Amended) The implant of claim 28, ~~further comprising a wherein at least a portion of at least one condylar articular implant surface has a three-dimensional shape that substantially matches the surface of an opposing~~ tibial implant component having a tibial plateau curvature derived from the curvature of the articular implant surface.

30. (Cancelled)

31. (Cancelled)

32. (Previously Presented) The implant of claim 28, wherein the implant has a thickness of a cartilage defect plus a predefined offset value.

33. (Previously Presented) The implant of claim 32, wherein said offset value can be selected to adjust for axis malalignment.

34. (Previously Presented) The implant of claim 28, wherein the implant is constructed of a material comprising metal or metal alloy.

35. (Previously Presented) The implant of claim 28, further having a structure for attachment on at least one of the bone-facing surface and the joint-facing surface selected from the group consisting of: ridges, pegs, pins, cross-members, teeth and protrusions.

36. (Previously Presented) The implant of claim 28, wherein the implant has a thickness similar to normal cartilage.

37. (Previously Presented) The implant of claim 28, wherein the implant has a thickness that is constant across the implant.

38. (Previously Presented) The implant of claim 28, wherein the implant has a thickness that varies across the implant.

39. (Cancelled)

40. (Currently Amended) The implant of claim 1, wherein at least a portion of the ~~condylar~~ bone-facing implant surface comprises a three-dimensional shape that substantially matches the shape of at least a portion of an uncut articular surface of the patient's femoral condyle, when the planar surface abuts the bone cut surface.

41. (Cancelled)

42. (Currently Amended) The implant of claim 1, wherein the at least a portion of the curvature of the condylar articular implant surface that comprises a three-dimensional shape that substantially replicates the shape of at least a portion of an uncut articular surface of the patient's femoral condyle substantially replicates the patient's cartilage surface, when the planar surface abuts the bone cut surface.

43. (Currently Amended) The implant of claim 1, wherein the distance between ~~a portion of the~~ condylar bone-facing implant surface and ~~a portion of the~~ condylar articular implant surface is predominately constant.

44. (Previously Presented) The implant of claim 43, wherein said distance is similar to the thickness of articular cartilage.

45. (Currently Amended) The implant of claim 1, wherein the distance between a portion of the condylar bone-facing implant surface and ~~a portion of the~~ condylar articular implant surface is variable.

46. (Previously Presented) The implant of claim 45, wherein the distance is similar to the thickness of articular cartilage.

47. (Cancelled)

48. (Cancelled)

49. (Previously Presented) The implant of claim 1, wherein a second component of the implant provides the tibial surface.

50. (Currently Amended) The implant of claim 1, wherein the at least a portion of the condylar articular bone-facing implant surface that comprises a curvature that substantially replicates the curvature of at least a portion of an uncut surface of the patient's femoral condyle that substantially replicates the curvature of the patient's condyle in approximately the sagittal plane.

51. (Previously Presented) The implant of claim 1, wherein the implant has only one condylar portion.

52. (Currently Amended) The implant of claim 1, wherein the condylar portion is a first condylar portion and further comprising a second condylar portion ~~[[s]]~~, wherein the first and second condylar portions are disposed on opposite sides of the trochlear portion.

53. (Currently Amended) The implant of claim 28, wherein the body of the implant comprises only one condylar portion.

54. (Currently Amended) The implant of claim 28, wherein the implant comprises two condylar portions ~~wherein the condylar portion is a first condylar portion and further comprising a second condylar portions, wherein the first and second condylar portions are disposed on opposite sides of the trochlear portion.~~

55. (Cancelled)

56. (Cancelled)